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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,351	12/21/2001	Eiichi Torigoe	4041J-000309/DVA	6345

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EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 09/25/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,351

Applicant(s)

TORIGOE ET AL.

Examiner

Tho v Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-15, 17 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 14, 24 and 26-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 13, 15, 17, 21-23 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10. 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

Claims 12-15,17 and 21-31 are pending. Claims 14, 24 and 26-31 are withdrawn from consideration since these claims do not read on the elected species of figure 9 and subspecies 10.

Response to Arguments

Applicant's arguments with respect to claims 12,13,15,17,21-23 and 25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12, 15,17, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada (US 6,237,678) in view of Furukawa Electric Co LTD (JP 9268339). Yamada discloses (figures 1 and 2) a heat exchanger (1) comprising a core portion (5) having a plurality of aluminum flat tubes (3); a plurality of inner fin (10) disposed inside the tubes; and a plurality of outer fins (4), the tubes (3) and the outer fins (4) being alternatively laminated; a tank (2) separately formed from the tubes wherein one end of each of the tubes is inserted into the tank; and a refrigerant flows within the tubes (3). Yamada does not disclose that the tubes are made of two-layers aluminum alloy with a brazing material applied on a sacrifice anode layer of the two layers plate and the fin is another aluminum alloy. Furukawa discloses (figures 1-5 and column

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3, line 9- column 5, line 35) a heat exchanger core comprising brazing sheets forming tubes (1) that has a core layer (5), which is made of a first aluminum alloy including manganese, and a second aluminum alloy interlayer (4) generally uniformly clad on an entire one side of the core layer (5) wherein the interlayer (4) plays a role as a sacrifice anode layer, which is electrochemically base with respect to the core layer (5); an outer fin (2) which is made of a third aluminum alloy; and the core portion further has a brazing material (3) applied on the sacrifice anode layer (4) wherein the sacrifice anode layer (4) is disposed to face a corrosive fluid and the core layer (5) is disposed to face a non-corrosive fluid such as refrigerant to increase the corrosion resistant of the heat exchanger's tubes for use in a severe corrosive environment. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Furukawa's teaching in Yamada's heat exchanger core to increase the corrosion resistant of the heat exchanger's tube for use in a severe corrosive environment. The method of forming "uniformly work-hardening", "work-hardened" and "bending" are not germane to the issue of patentability of the device itself. Therefore, these limitations have not been given patentable weight because the product in combination of Yamada and Furukawa is the same with the product as claimed. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985), (See MPEP 2114). Regarding claim 17, the limitation "the core evaporates the refrigerant" is not also given any patentable weight since stated in Ex parte

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Masham “a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any structural limitation upon the claimed apparatus which differentiates it from a prior art apparatus satisfying the structural limitations of that claimed”.

Claims 13 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada and Furukawa as applied to claim 12 and 21 above, and further in view of Evans et al. (US 5,771,962). Yamada and Furukawa substantially disclose all of applicant's claimed invention except for the limitation that the fin having flat top through with each of the fin is joined to the tube in by brazing in a straight line. Evan discloses (figures 2 and 3) that heat exchanger that has an external corrugated fin (22) brazed on to a tube (12) wherein the corrugated fin (22) has a plurality of parallel folds and flat tops. Evan further discloses that (column 4, lines 30-38) that a brazing flux (13) is placed along a joint between the flat top of the fin and the tube, which is a straight line, to increase the joint strength between the corrugated fin and the tube. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Evan's teaching in the combination device of Yamada and Furukawa to increase the joint strength between the corrugated fin and the tube.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohara et al. (US 5,720,340) discloses a laminated type heat exchanger that has a plurality of layers with different in electro potential forming a brazing sheet.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

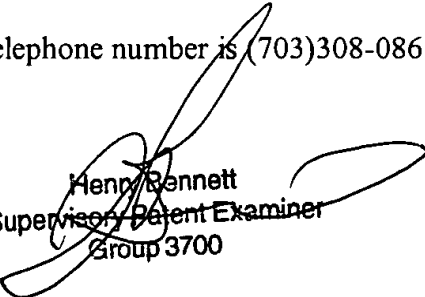
Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7764.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.

Tho Duong

September 20, 2003


Henry Bennett
Supervisor Patent Examiner
Group 3700